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ABSIRACT

THE PROCESS OF SITE EVALUATION AND SELECTION FOR THE EXPANSION OF A COMMUNITY COLLEGE IS DISCUSSED. TWO SITES, ONE DOWNTOWN, THE OTHER SUBURBAN, ARE RECOMMENDED FOR CONSIDERATION. BACKGROUND INFORMATION IS GIVEN ON POPULATION PATTERNS, ENROLLMENT POTENTIAL, CAMPUS SIZE, AND SITE AREA REQUIREMENTS. TEN POTENTIAL SITES ARE ANALYZED USING THE SITE SELECTION CRITERIA OF--(1) LOCATION, (2) ACCESS, (3) SIZE, (4) ENVIRONMENT, (5) SITE CHARACTER, (6) RELATIONSHIP TO COMMUNITY PLANS, (7) UTILITIES, AND (8) AVAILABILITY AND COST. MAPS AND DIAGRAMS EXPLAIN THE CHARACTERISTICS OF THE INDIVIDUAL SITES. (TC)

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SITE SELECTION STUDY

DELAWARE TECHNICAL AND COMMUNITY COLLEGE

NORTHERN BRANCH

CAUDILL ROWLETT SCOTT
ARCHITECTS PLANNERS ENGINEERS
HOUSTON DECEMBER 1968 NEW YORK

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CONTENTS

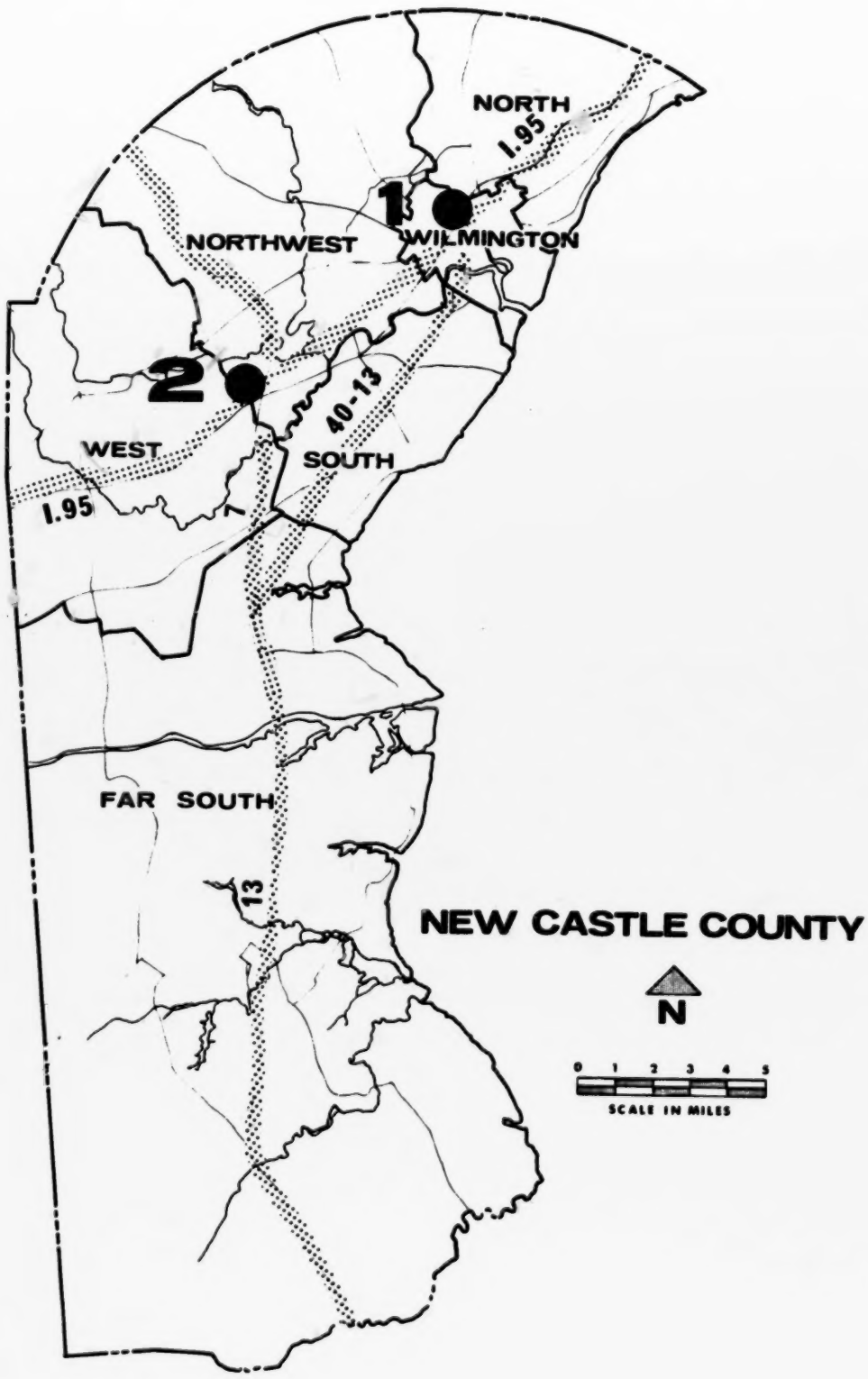
RECOMMENDATION
Recommended Sites 2

BACKGROUND
Population Patterns 6
Enrollment Potential 11
Campus Size 12
Site Area Requirements 14

ANALYSIS OF POTENTIAL SITES
A1/Central City 21
A2/Howard School 25
B1/Stafford Property 29
B2/Welfare Foundation, Inc. 31
B3/Donoghue Estate 31
C1/Ferris School Property 35
C2/Breidablick Farm 37
C3/DuPont Airport 39
D/New Castle Commons 41
E/Langenfelder Property 43
Estimated Costs 45

APPENDIX
Table 1/Population and High School Graduates Projections 48
Table 2/Enrollment Projections 49
Table 3/Land Area Requirements – Urban Site 50
Table 4/Land Area Requirements – Suburban Site 50
Table 5/Parking Study 51

RECOMMENDATION



RECOMMENDED SITES

It is recommended that Delaware Technical and Community College adopt a program of multi-campus physical facility development in the urban area of Northern Delaware and proceed to acquire, as soon as possible, the first of two sites – a downtown location and a suburban location. Location of these first two sites recommended are:

Downtown Site – Approximately 17 acres to be secured as part of the South Center City Urban Renewal project. Site is two parcels bounded by the following streets: Fourth, Walnut, Second, West.

Suburban Site – Approximately 125 acres in the vicinity of Interstate Highway 95, Route 7, and New Churchman Road.

It is also recommended that a third site be acquired in the future to be available for development by 1976.

The primary factors in this recommendation are:

The potential enrollment of 9,000 full-time equivalent day students by 1985 (23,400 total student headcount).

The desire of the college to maintain an optimum level of 3,000 to 3,500 full-time equivalent day students as a maximum at any one campus (approximately 7,800 to 8,700 total student headcount).

The flexibility offered by a downtown and suburban combination for different program offerings, for accessibility to student population within the service area, and for development timetables. A downtown site would be a strong asset for certain program offerings, while a larger site only available in a suburban location would give potential for those programs requiring more building and ground space.

To aid in the actual process of selection the consultants have rated the downtown and suburban sites so that alternate choices can be made if the recommended and most desirable sites are not available for reasons not known to the consultant. It should be pointed out that particular sites have not been surveyed with respect to specific subsoil investigations, and it is to be assumed that after options or necessary arrangements have been made that this should be done prior to acquisition. This order of preference is:

Downtown – A1, A2
Suburban – B1, B2, B3, C1, C2, C3, D, E

The general location of the two campuses recommended for Delaware Technical and Community College is indicated on the following page.

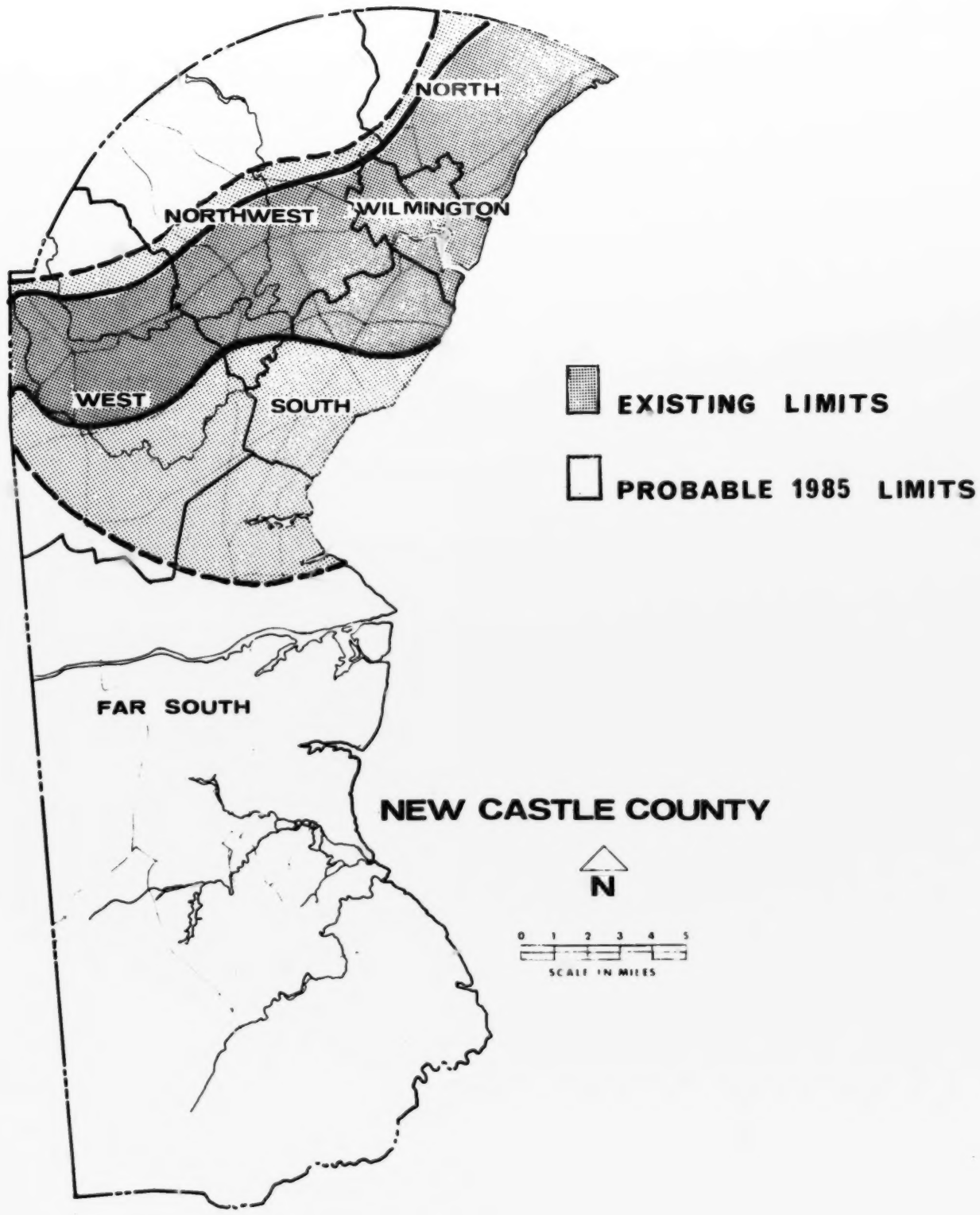
BACKGROUND

POPULATION PATTERNS

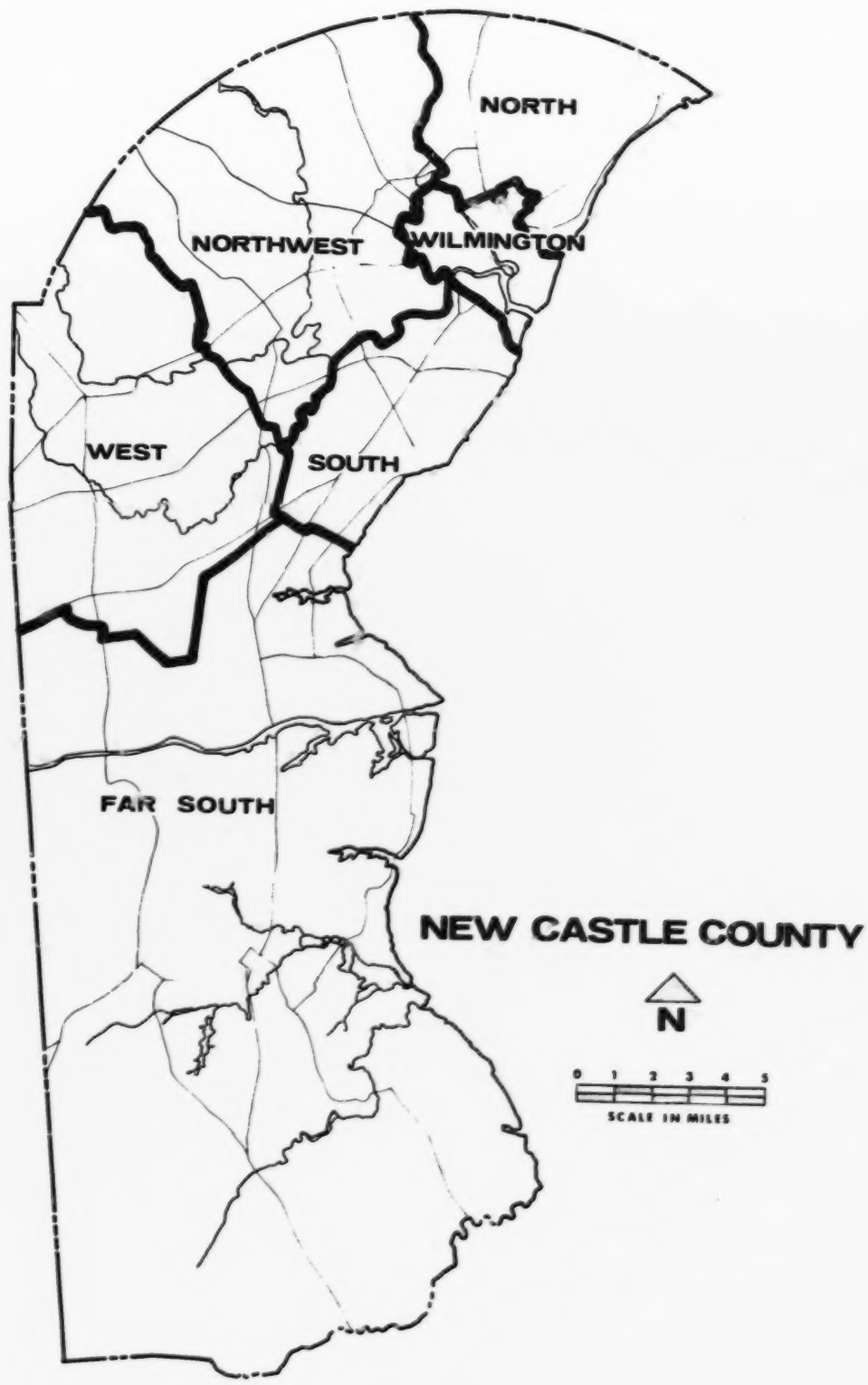
The service area of the Northern Branch of Delaware Technical and Community College is considered to be basically New Castle County. In the immediate future, students from Kent County will also be commuting to the Northern Branch until a campus is located in the Dover Area. The 1964 population in New Castle County was approximately 326,000 and is expected to be over 672,000 by 1985 according to the local planning agency forecasts. The primary population pattern change in the years ahead is major growth to the west and south. The table below gives expected population totals by sector. On the following pages are two graphics: one gives population change expressed in urban limits shown now and expected by 1985; the second, a map showing the sectors listed below:

	1964 Population		1985 Population	
Sector	Total	Per Cent	Total	Per Cent
Wilmington	8,397	27.09	110,200	16.38
North	66,412	20.35	127,645	18.98
Northwest	73,050	22.39	115,548	17.18
West	42,571	13.05	169,423	25.19
South	41,213	12.63	68,218	10.15
Far South	14,653	4.49	81,558	12.13
Total	326,296	100.00	672,592	100.00

Source: Table 33, page 76. Arthur D. Little report for Greater Wilmington Development Council.

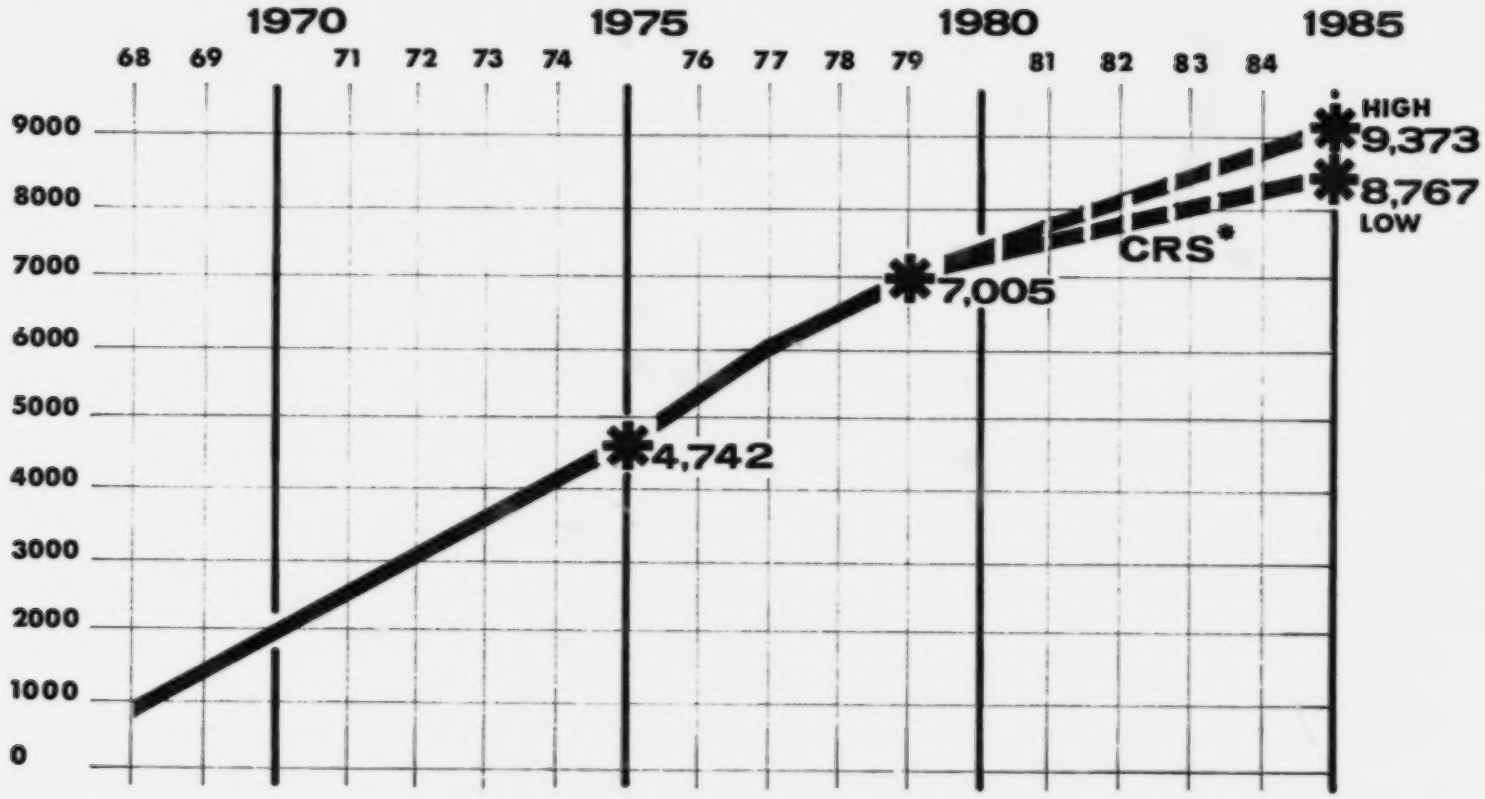


URBAN LIMITS 1968 - 1985



COUNTY SECTORS

ENROLLMENT PROJECTIONS



*BASED ON A.D. LITTLE METHODOLOGY

ENROLLMENT POTENTIAL

The size of project enrollment and its influence on land area requirements is a major factor in site selection. Enrollment potential for the Northern Branch of Delaware Technical and Community College is listed below and on the following page. Projections through 1979 indicating a full-time equivalent day enrollment of 7,005 students (17,511 total student headcount) have been made by Arthur D. Little, Inc. in their report to the Greater Wilmington Development Council. The following quote is taken from page 73 of their report:

> On this basis, we estimate the total potential FTE *day* enrollment for the Technical and Community Colleges in northern Delaware will be about 900 for an opening class in 1968, and will increase to 7,000 by 1980. *Total* FTE enrollment, which includes students in the evening program, could start at about 110 and grow to about 11,000 by the end of the next decade. This would represent a total *headcount* enrollment for the first year of slightly over 2,000 students, and about 17,500 by 1980. *Estimates of potential demand derived from this procedure are recommended for planning the curriculum and physical facilities.*

It is the recommendation of Caudill Rowlett Scott that a forecast to 1985 or some 17 years hence be used for site selection evaluations.

Since population forecasts through 1985 by local planning agencies were available, Caudill Rowlett Scott used the same methodology established by the Arthur D. Little, Inc. report to forecast a 1985 potential enrollment. The table below reviews this information. The more comprehensive table from which this was derived is found in Table 2 in the appendix.

	1970	1975	1979	1985
FTE Day	2,033	4,752	7,005	9,373
FTE Total	2,988	7,188	10,928	12,193
Headcount Day	2,836	6,683	9,968	13,340
Headcount Total	4,671	11,388	17,511	23,426

CAMPUS SIZE

What is the ideal size for a community college campus? This is the $64 question posed by many educators. A discussion on this was included in an article by Stuart E. Marsee in the December '66/January '67 issue of *Junior College Journal* entitled, "When is Large too Big?".

Evidence of a concern for size formed in the fact that numerous colleges are now basing their long-range plans on the Oxford "college within a college" concept or "house plan" which is intended to subdivide campus enrollments into smaller and more viable groups.

In a report by Arthur M. Jensen, "Urban Community Colleges Go Multicampus," in the November '65 issue of the *Junior College Journal,* a survey of 10 multi-campus college districts indicated a preference for from 3,500 to 4,500 students. DTCC has expressed a preferred student range of from 3,000 to 3,500.

Assuming 3,500 as a desired maximum and using the current enrollment projections for DTCC, the indication is that the Northern Branch would have need for two campuses by 1973 and a third campus by 1979.

Some community college forecasters take even a more optimistic view.

> For example, the enrollment projections for Northern Branch DTCC result in a maximum total headcount enrollment of 3.5% of population. Some of the more optimistic educators believe this figure will eventually approach 10%.
>
> Still others views are taken.
>
> > A public awareness, understanding and support of community colleges has only begun.
> >
> > It is inevitable that the American society will, by whatever means, achieve universal higher education for all.
> >
> > To the programs designed for the young high school graduate, add the other programs in continuing education, community services and other comprehensive fields of endeavor espoused by some community college districts and the implication is that the number of college campuses may approach the number of high schools.

These examples, of course, call attention to the more optimistic prognostications, but they may be pointing up the possibility that the multi-campus is becoming the order of the day.

A few examples of recently established multi-campus community college districts are as follows:

Seattle, Washington (Population 557,087, 1960 U.S. Census) Current operation is in interim facilities. Two new campuses are being planned simultaneously for north and south areas of the city respectively, currently in construction document phase. A third permanent campus for center city Seattle is currently in early planning phase.

Dallas County, Texas (Population 951,527, 1960 U.S. Census) Downtown campus operational in a remodeled department store. Adjacent land will allow for expansion with new buildings. Three new suburban campuses are being planned simultaneously, currently in schematic design phase. Three additional sites have been acquired and held in reserve for future campuses.

Miami—Dade County, Florida (Population 935,947, 1960 U.S. Census) Two permanent campuses are now in operation, designated north and south. Plans call for a third campus in downtown Miami.

In justifying the multi-campus approach, the following principal reasons were given by the ten districts surveyed in the Jensen report:

To compensate for district geographical size which prohibited one campus from servicing the district adequately.

To equalize educational opportunities through effective accessibility of the college to the residents of the district.

To meet the differing educational needs of the various communities located within the district.

To accommodate applicants after the district's only campus had reached its maximum capacity.

To keep each campus to a reasonable and functional size.

The uniqueness of the community college is its individuality and, as its title implies, orientation to the needs of its own community. DTCC will not be quite like any other college system. It was created to help fulfill the particular needs of the people of Delaware and is fortunate to have imaginative administrative leadership working toward this goal. The Northern Branch is in the formative stage and detailed characteristics have yet to be determined. As planning, programming, and development proceed in the future, these characteristics will emerge.

At this early stage of the Northern Branch development, it is the best judgment of the college administration and their campus planners that one characteristic has emerged with the greatest of logic.

That characteristic is multi-campus development.

SITE AREA REQUIREMENTS

The area required for a community college site must be considered in relationship to anticipated development. At this point only a rough judgment can be made of future development, but it is sufficient to gain a perspective of land area needs. The following assumptions are used:

3,000 full-time equivalent day enrollment.

390,000 gross square feet of building based on 130 SF per FTE student.

Expansion factor of 67%.

More detailed information used to calculate land area requirements is found in the appendix, Tables 3 and 4. This includes parking ratios, spaces, etc.

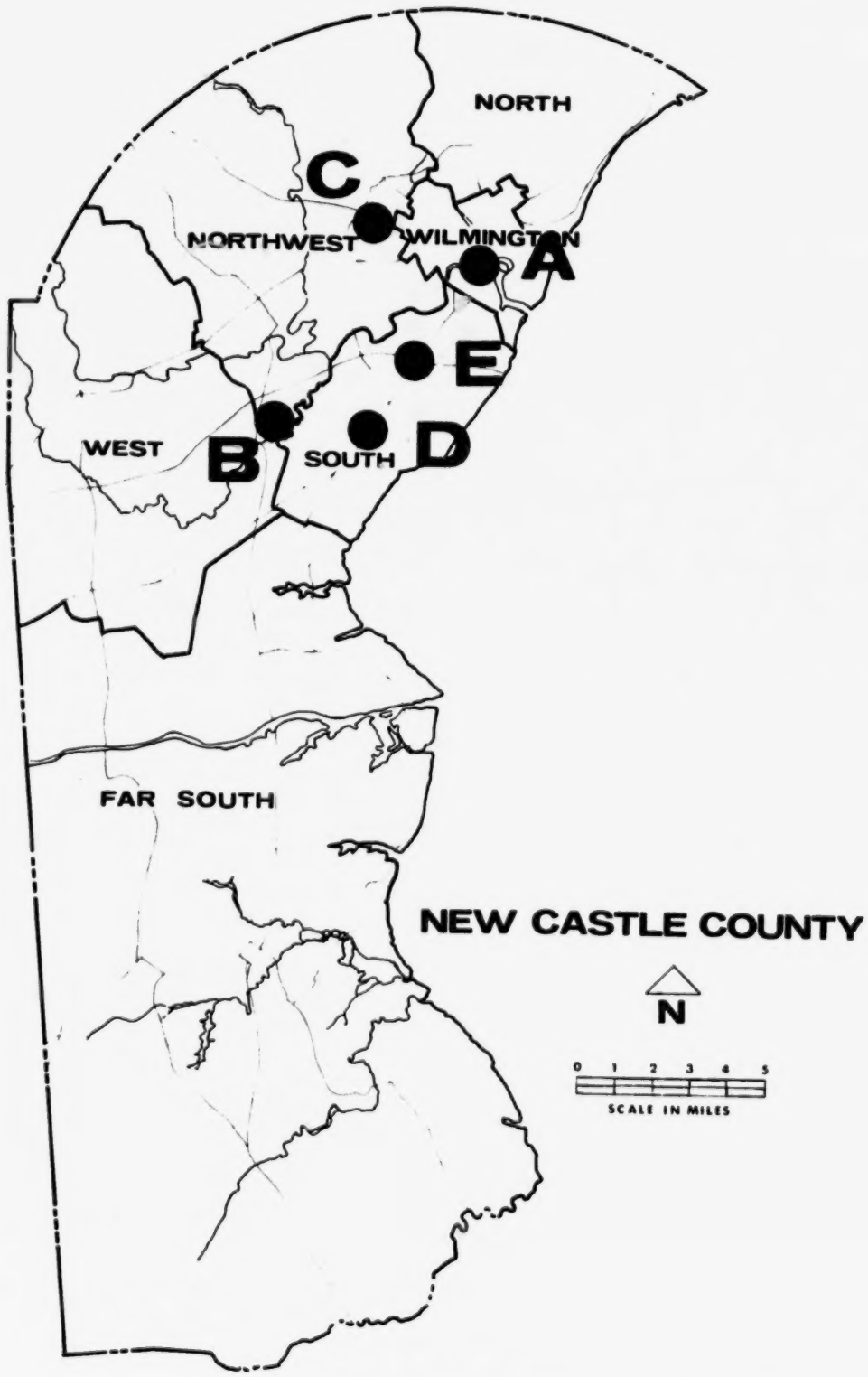
A summary of total land area requirements by category is found below:

Category	Downtown	Suburban
Buildings and Courts	6.0	22.4
Parking	3.6	25.2
Streets and Drives		7.6
Open Space and Recreation		20.0
Expansion	6.3	50.0
Total Acres	15.9	125.2

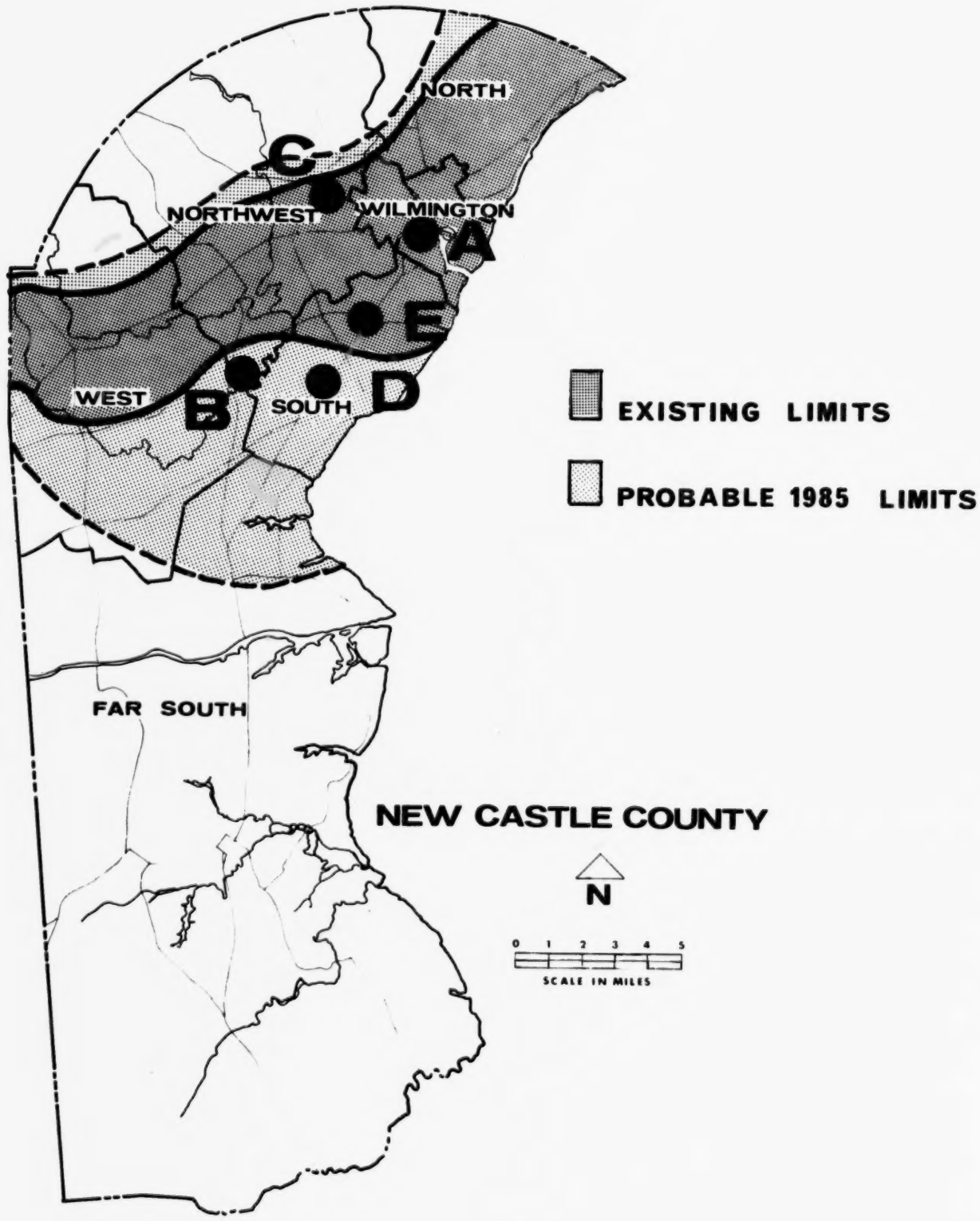
ANALYSIS OF POTENTIAL SITES

SITE SELECTION CRITERIA

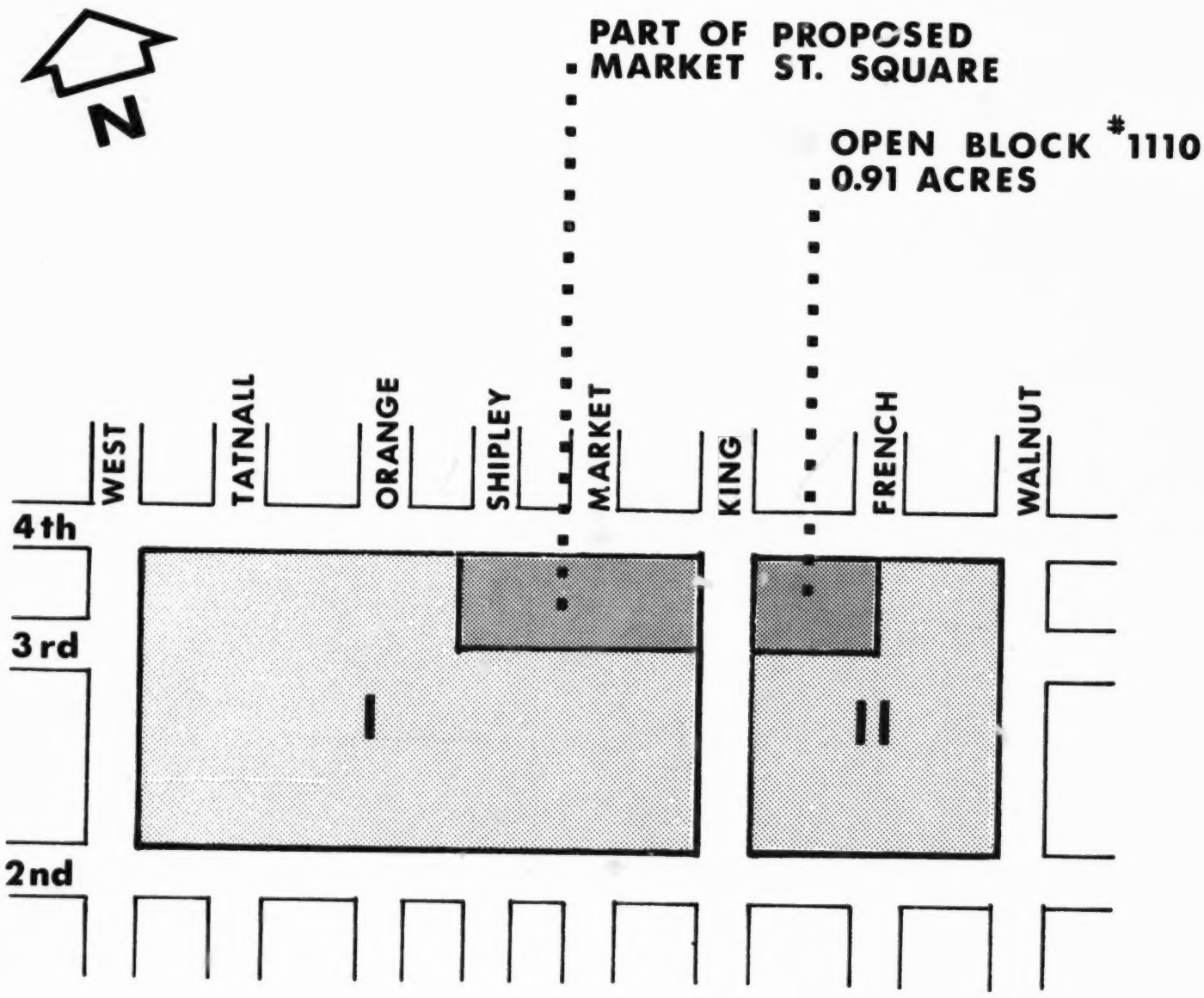
- location
- access
- size
- environment
- site character
- relationship to community plans
- utilities
- availability and cost



POTENTIAL SITES



RELATIONSHIP:
POTENTIAL SITES & URBAN LIMITS



I	630,000 SF.	13.5 ACRES
II	300,000 SF.	6.9 ACRES
	TOTAL	20.4 ACRES
	LESS STREET WIDENING	3.1 ACRES
	NET	17.3 ACRES

A1

SITE A 1 CENTRAL CITY

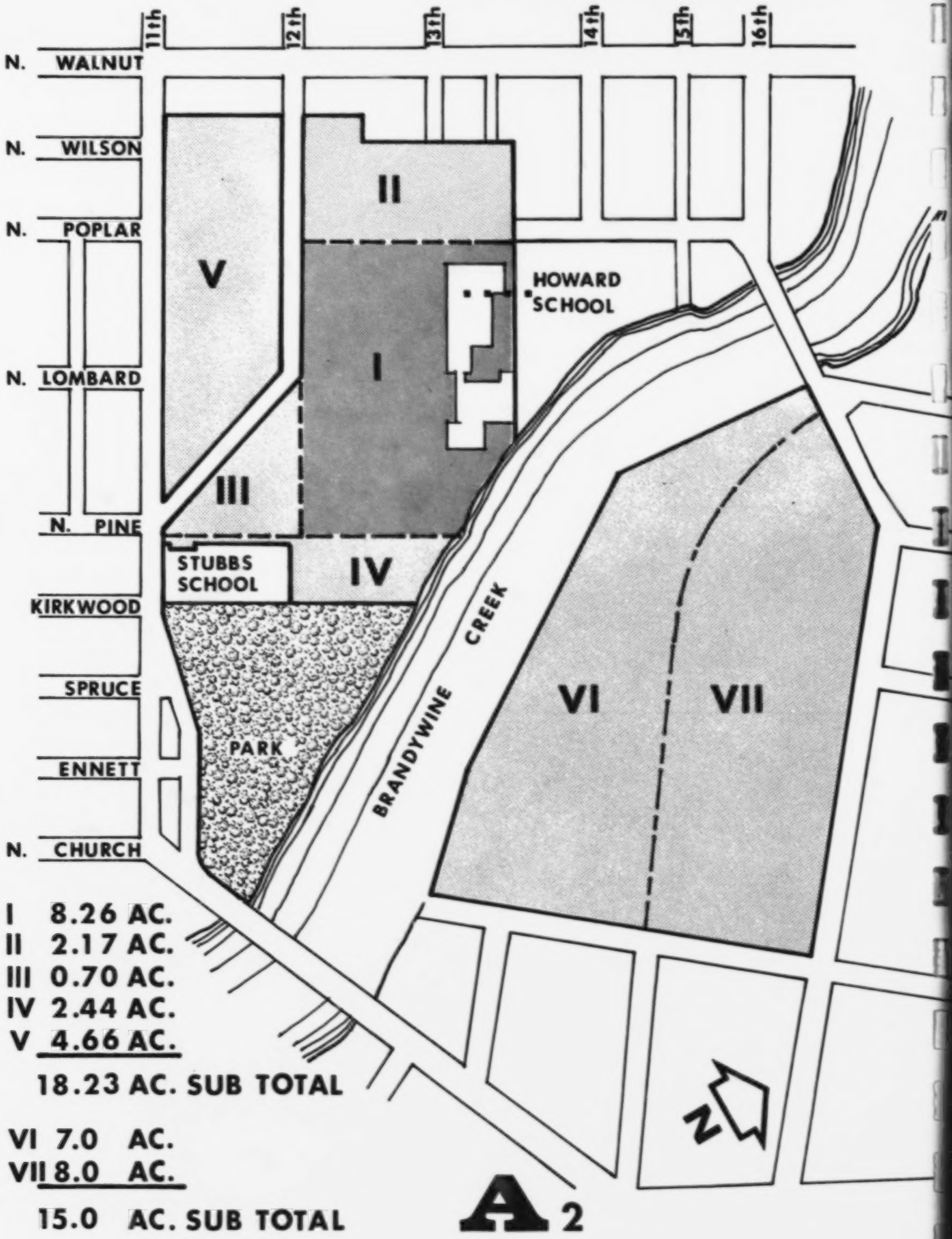
LOCATION	South edge of central downtown Wilmington Good relationship to existing urban pattern
ACCESS	Excellent relationship to public transit Served well by major street network Pedestrianway to remainder of downtown planned
SIZE	17.3 acres possible (in two parcels) adequate for downtown site Would depend upon urban renewal
ENVIRONMENT	Presently blighted area of mixed commercial and high-density residential Future urban renewal plans would make environment highly desirable
SITE CHARACTER	Highly urban Would be adjacent to proposed Market Street Square
RELATIONSHIP TO COMMUNITY PLANS	Long-range plan calls for institutional use on this site
UTILITIES	All available
AVAILABILITY AND COST	Would depend upon urban renewal

SITE A 1 GENERAL COMMENTS

This center city site is without question a most desirable potential location in the downtown area. Previous planning activity for the redevelopment of downtown Wilmington has envisioned an institutional land use of approximately 17 acres as the southern anchor at the end of a pedestrian mall terminated by a square at the intersection of Fourth and Market Streets. The proposed mall along Market Street would strongly tie this institutional use to other major elements in downtown Wilmington.

Present urban renewal plans call for this property to be cleared and available for redevelopment. Reference to the City of Wilmington's Community Renewal Program (especially page 47) gives a clear perspective of the extreme importance of the proposed community college to the feasibility of the South Center City urban renewal project.

The goal of having a central city community college campus and of providing a catalyst for the redevelopment of a very important area of downtown Wilmington (as envisioned in the Arthur D. Little report to the Greater Wilmington Development Council and as depicted in the previous plans of local planning and renewal agencies) makes this a highly suitable site. Every effort should be made to expedite the urban renewal activity required so this site can be redeveloped as a Wilmington Downtown Campus for Delaware Technical and Community College.


11th
12th
13th
14th
15th
16th
N. WALNUT
N. WILSON
N. POPLAR
N. LOMBARD
N. PINE
KIRKWOOD
SPRUCE
ENNETT
N. CHURCH
II
V
I
III
IV
HOWARD SCHOOL
STUBBS SCHOOL
PARK
BRANDYWINE CREEK
VI
VII
N
I 8.26 AC.
II 2.17 AC.
III 0.70 AC.
IV 2.44 AC.
V 4.66 AC.
18.23 AC. SUB TOTAL
VI 7.0 AC.
VII 8.0 AC.
15.0 AC. SUB TOTAL
A 2

SITE A 2 HOWARD SCHOOL

LOCATION	Immediately north of central downtown Wilmington Good relationship to existing urban pattern
ACCESS	Good relationship to public transit Served by one-way pair of east-west streets, Eleventh and Twelfth Fair pedestrian access to downtown
SIZE	Approximately 18 acres possible (in two parcels) – adequate for downtown site Possible expansion across Brandywine Creek Would depend upon urban renewal
ENVIRONMENT	Presently severely blighted area of industrial, high-density residential and institutional Future urban renewal area would change present environment
SITE CHARACTER	Highly urban Adjacent to park and creek
RELATIONSHIP TO COMMUNITY PLANS	Long-range urban renewal plans call for areas to be primarily residential
UTILITIES	All available
AVAILABILITY AND COST	Availability somewhat of a question mark Would depend upon vacating existing schools and urban renewal

SITE A 2 GENERAL COMMENTS

This site has been recommended by the City of Wilmington with concurrence by the Greater Wilmington Development Council, Inc. Basic in the recommendation is the site's central location and the availability of a portion of it within from three to four years.

In reviewing the advantages and disadvantages of redeveloping this site for a community college campus, one important consideration seems evident. Until the complete tract south of Brandywine Creek is available for redevelopment through urban renewal, this site should be used only on a temporary basis. Additional permanent development on the small amount of land now available would greatly compromise both the selection and implementation of the most desirable long-range development plan for the area.

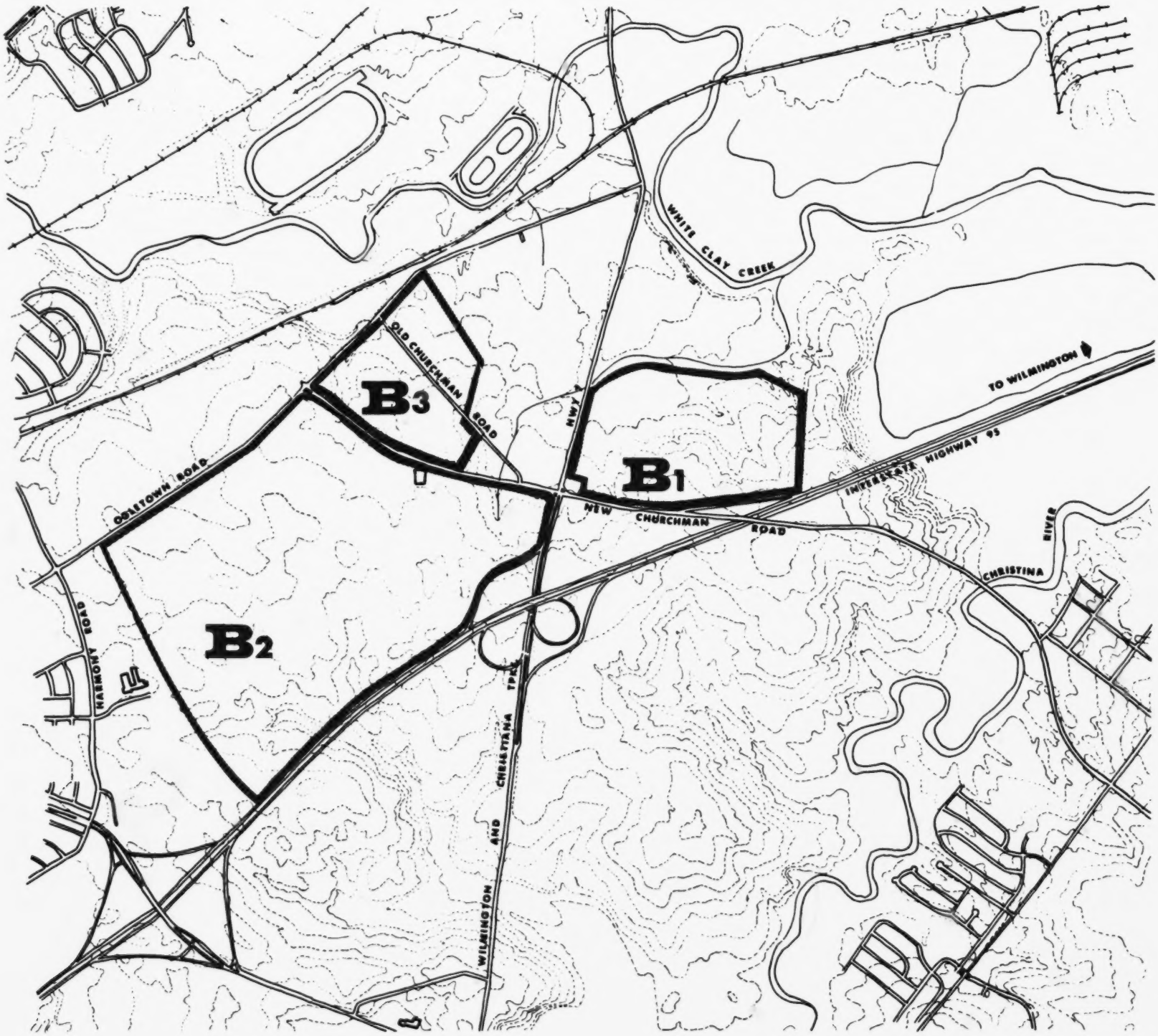
Initially, all open land would be required as parking to serve the existing building. A logical area for long-range development of parking structures would be between Eleventh and Twelfth Streets (not available until urban renewal activity would clear and sell for redevelopment).

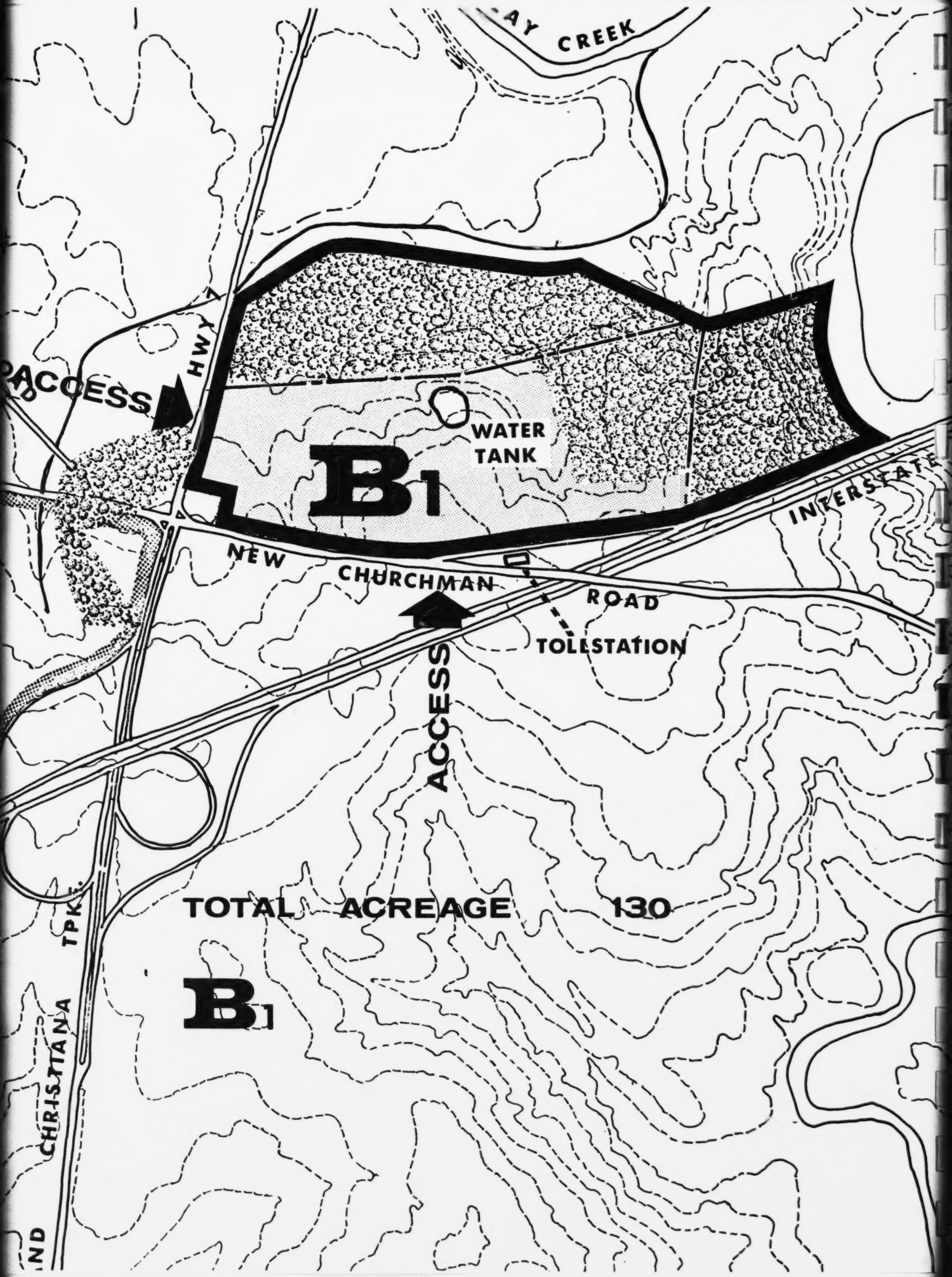
Most of this site is part of an area just north of the two one-way streets that serve the downtown area to the south. Previous planning studies have called for this area to be residential land use adjacent to a park strip along the river. This still remains a very logical land use program for this area of Wilmington.

The existing low-density development of Howard High School (FAR of 0.6) will require the remaining 13 acres to be developed to an even higher floor area ratio than the anticipated average of 1.5, if that average is to be maintained.

The existing Howard High School contains some 65,000 SF of net assignable area. The spaces which make up the above total consist of classrooms, shops, laboratories, cafeteria, auditorium, small gymnasium, and locker rooms. There is no question that this facility could be rehabilitated: in its present condition, it could accommodate temporarily the DTCC student enrollment until permanent facilities could be established. The present temporary quarters of the DTCC are in close proximity to Howard School, and it is our understanding that space in and near the existing temporary campus might become available to provide adequately for required expansion. Therefore, it is possible that the Howard School could be used as a complement to the existing temporary campus should the projected enrollment exceed present expectations.

The structure of Howard High School allows little potential for the rearrangement of partitions and space within the school in a rehabilitation program. Adding new partitions to define smaller spaces would be about the only possibility. This greatly limits its use in effectively meeting and responding to an educational program requiring a wide variety of space areas. Because of this limitation and its low land use density, it should not be considered as a permanent structure in any long-range development plan.


WHITE CLAY CREEK
OLD CHURCHMAN ROAD
B3
B1
NEW CHURCHMAN ROAD
TO WILMINGTON
INTERSTATE HIGHWAY 95
CHRISTINA RIVER
ODELTOWN ROAD
HARMONY ROAD
B2
WILMINGTON AND CHRISTIANA TPK.


AY CREEK
ACCESS
HWY
WATER
TANK
B1
INTERSTATE
NEW
CHURCHMAN
ROAD
TOLLSTATION
ACCESS
TOTAL ACREAGE 130
B1
TPK.
CHRISTIANA
ND

SITE B 1 STAFFORD PROPERTY

LOCATION	North of New Churchman Road at Highway 195 South of existing urban pattern Good relationship to expected future urban pattern
ACCESS	Excellent from downtown by Highway 195 Served by New Churchman Road and Highway 7 On projected transit route (express route from downtown Wilmington)
SIZE	92.7 acres – additional acreage possible in adjacent tract
ENVIRONMENT	Basically undeveloped – service station option on corner
SITE CHARACTER	Topography: Gently rolling to flat Views: Good visibility from adjacent roads Special Features: Trees provide interesting backdrop at edge of site for development
RELATIONSHIP TO COMMUNITY PLAN	Long-range plan calls for industrial or commercial use – no problem for institutional use in area
UTILITIES	All available except that sanitary sewer extension of approximately 6400 feet will be required
AVAILABILITY AND COST	Unknown availability Cost estimated at approximately $900,000

B3

TOTAL ACREAGE 100

ACCESS

OGLETOWN ROAD

OLD CHURCHMAN ROAD

B3

CHURCHMAN

ELEC. SUBSTATION

B2

HIGH VOLTAGE OVERHEAD

TOTAL ACREAGE 400

B2

AND

CHRISTIANA

TPKE.

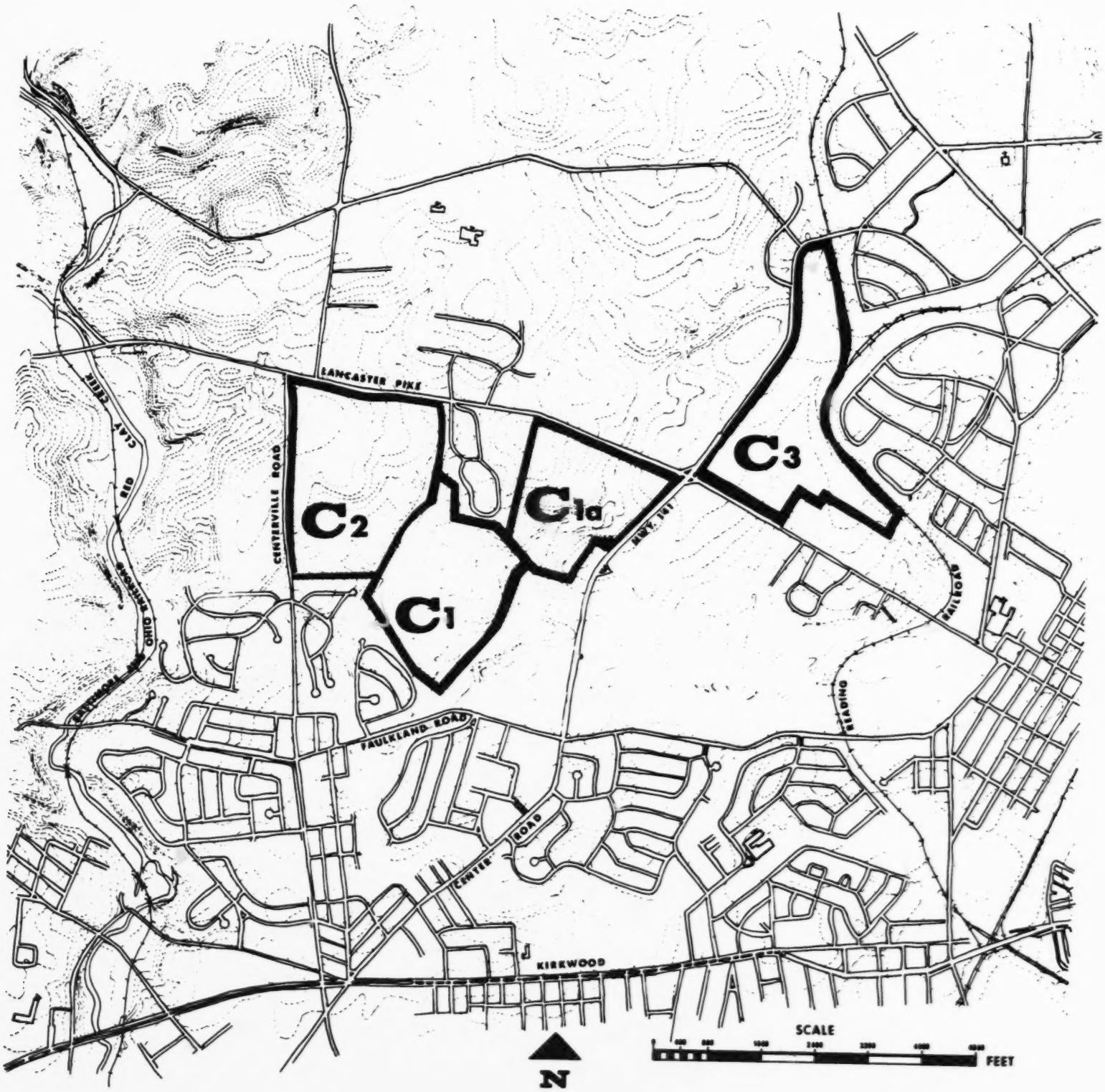
SITE B 2 WELFARE FOUNDATION, INC.

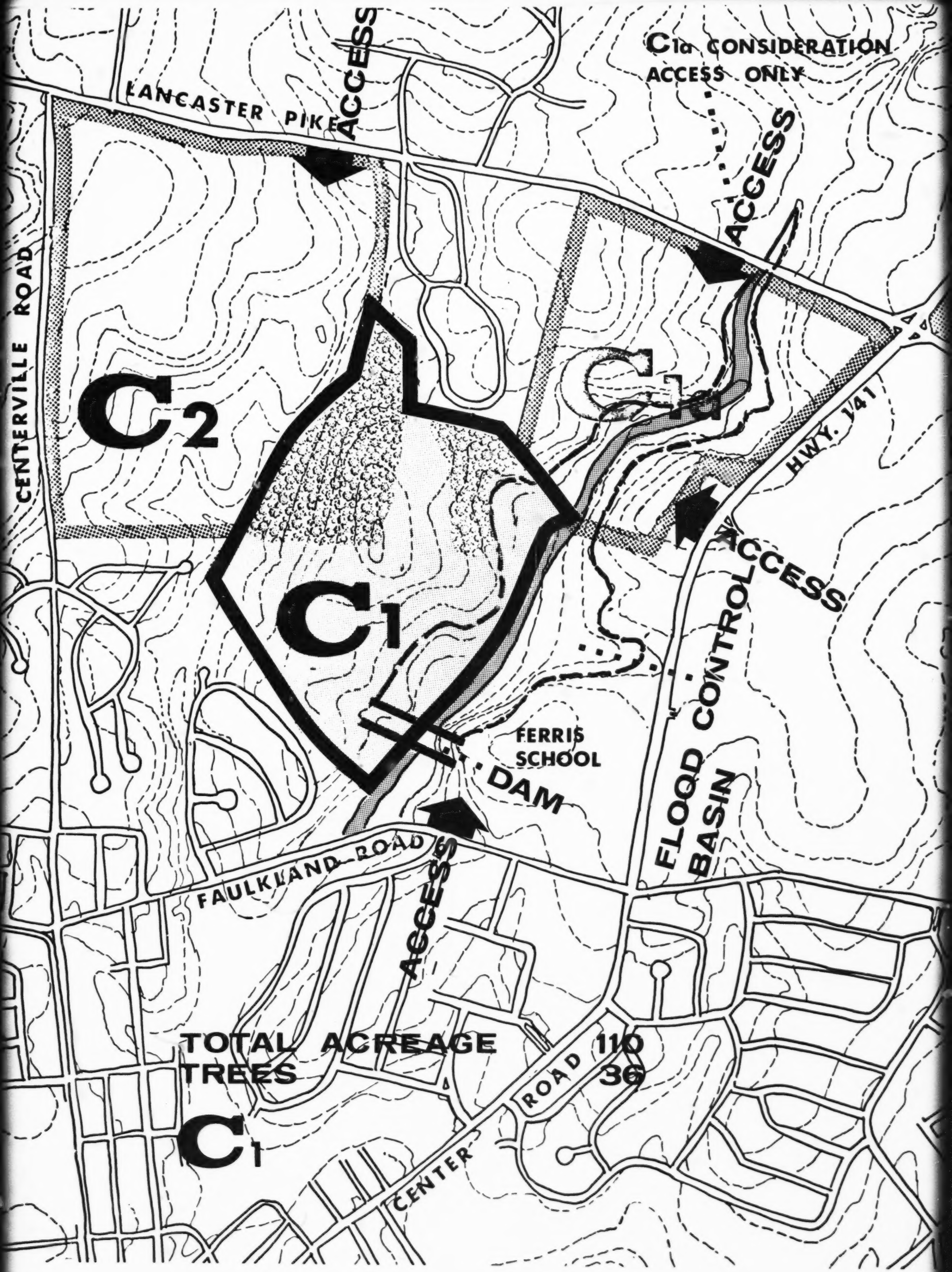
Same considerations as Site B1 except for size and availability

SIZE	Over 400 acres
AVAILABILITY AND COST	Unknown

SITE B 3 DONOGHUE ESTATE

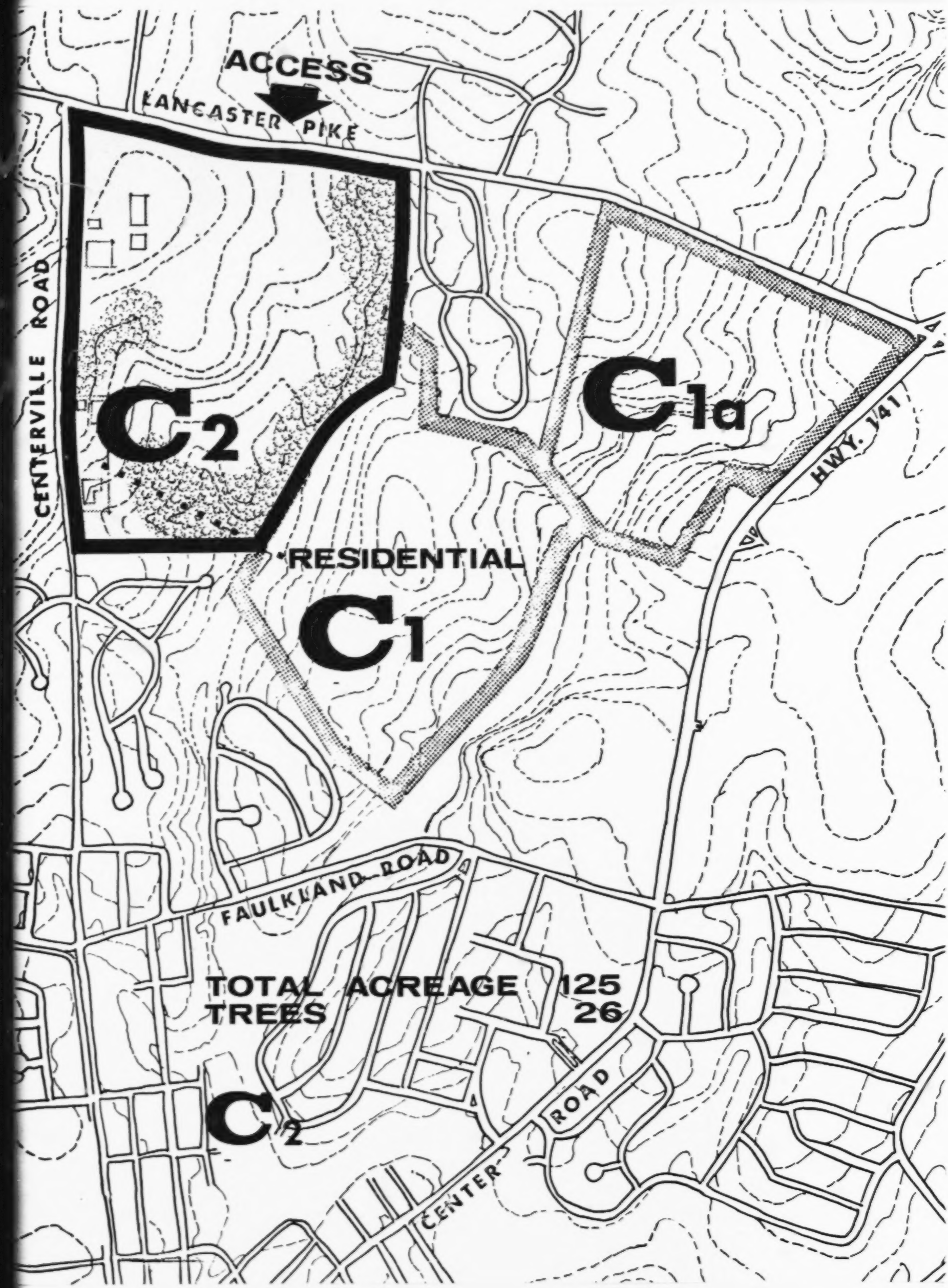
LOCATION	New Churchman Road at Highway 7 South of existing urban pattern Good relationship to expected future urban pattern
ACCESS	New Churchman Road Secondary access at Stanton Road
SIZE	57 acres Additional acreage to north would be desirable
ENVIRONMENT	Newly developing area, now farmland
SITE	Topography: Fairly flat, no development problems Views: Good visibility from adjacent roads
RELATIONSHIP TO COMMUNITY PLANS	Long-range plans call for commercial and industrial development
UTILITIES	All available except sanitary sewer – extension of approximately 5000 feet
AVAILABILITY AND COST	Unknown Availability Cost estimated at $8,000 per acre


LANCASTER PIKE
CENTERVILLE ROAD
OHIO CENTERVILLE
CLAY CREEK
C2
C1a
C1
C3
HWY. 141
FOULKROD
READING
FAULKLAND ROAD
CENTER ROAD
KIRKWOOD
SCALE
FEET
N


C1a CONSIDERATION
ACCESS ONLY
LANCASTER PIKE
ACCESS
ACCESS
CENTERVILLE ROAD
C2
C1
HWY. 141
ACCESS
FERRIS
SCHOOL
DAM
FLOOD CONTROL
BASIN
FAULKLAND ROAD
ACCESS
TOTAL ACREAGE 110
TREES 36
C1
CENTER
ROAD

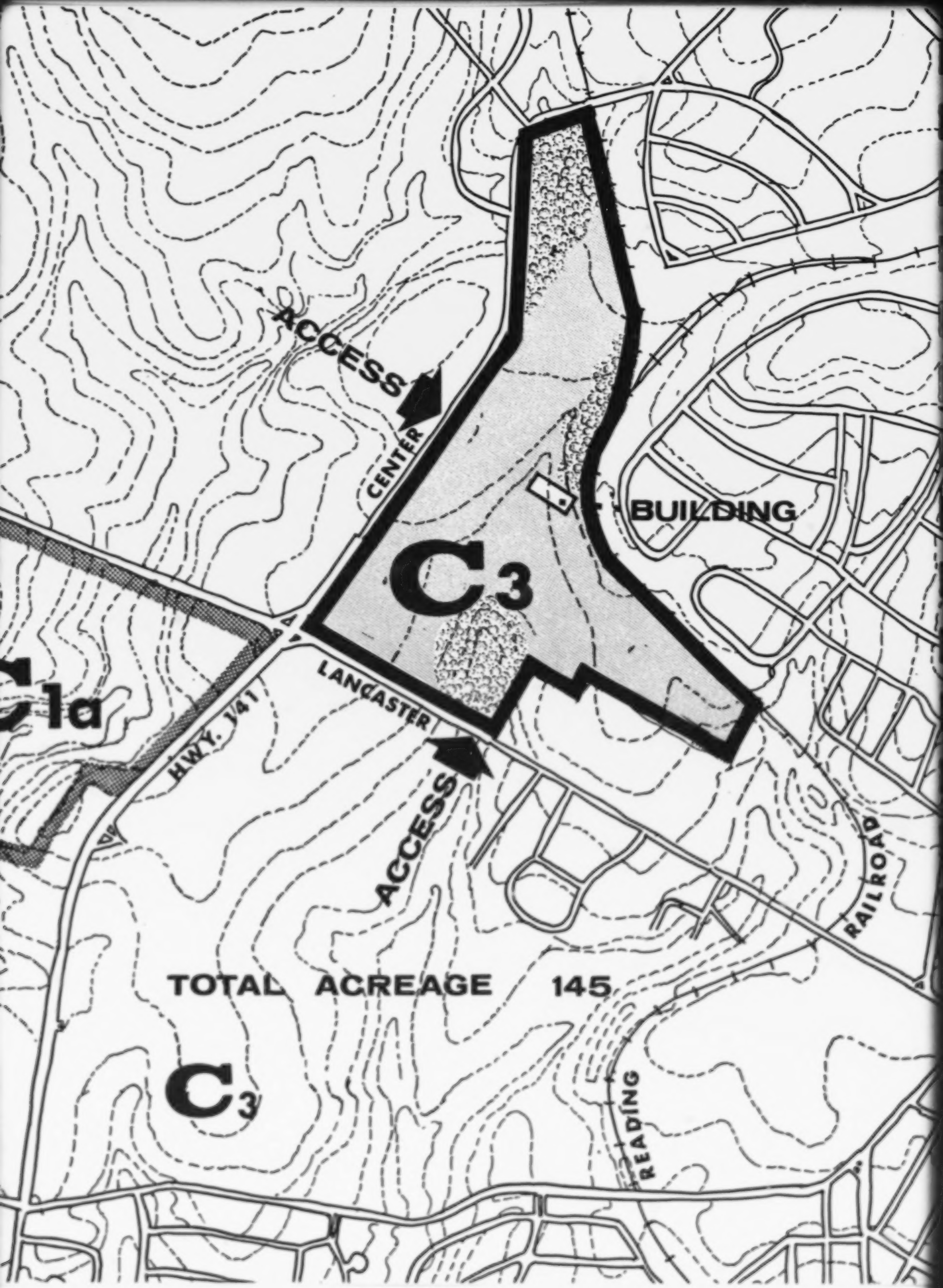
SITE C 1 FERRIS SCHOOL

LOCATION	Southwest of intersection of Highway 141 and Lancaster Pike Good relationship to existing urban pattern
ACCESS	No major street frontage gives access problem Acquiring adjacent land possible solution Limited number of good access points on 141 and Lancaster Pike Near public transit route
SIZE	Approximately 95 acres above planned retention basin Tree cover on approximately 36 acres
ENVIRONMENT	Residential neighborhood with some institutional and industrial uses along adjacent major streets
SITE CHARACTER	Topography: Moderately rolling – slopes, a strong architectural influence Views: To and from south and east – good long vistas Special: Northern portion of site is heavily timbered (36 acres) – retention basin planned at eastern edge of site on Little Mill Creek
RELATIONSHIP TO COMMUNITY PLANS	Area had been planned as institutional use since the land is in state ownership
UTILITIES	All available Sanitary sewer might be problem – overloaded outfalls in area
AVAILABILITY AND COST	State ownership – no problem anticipated


ACCESS
LANCASTER PIKE
CENTERVILLE ROAD
C2
C1a
HWY. 141
RESIDENTIAL
C1
FAULKLAND ROAD
TOTAL ACREAGE 125
TREES 26
C2
CENTER
ROAD

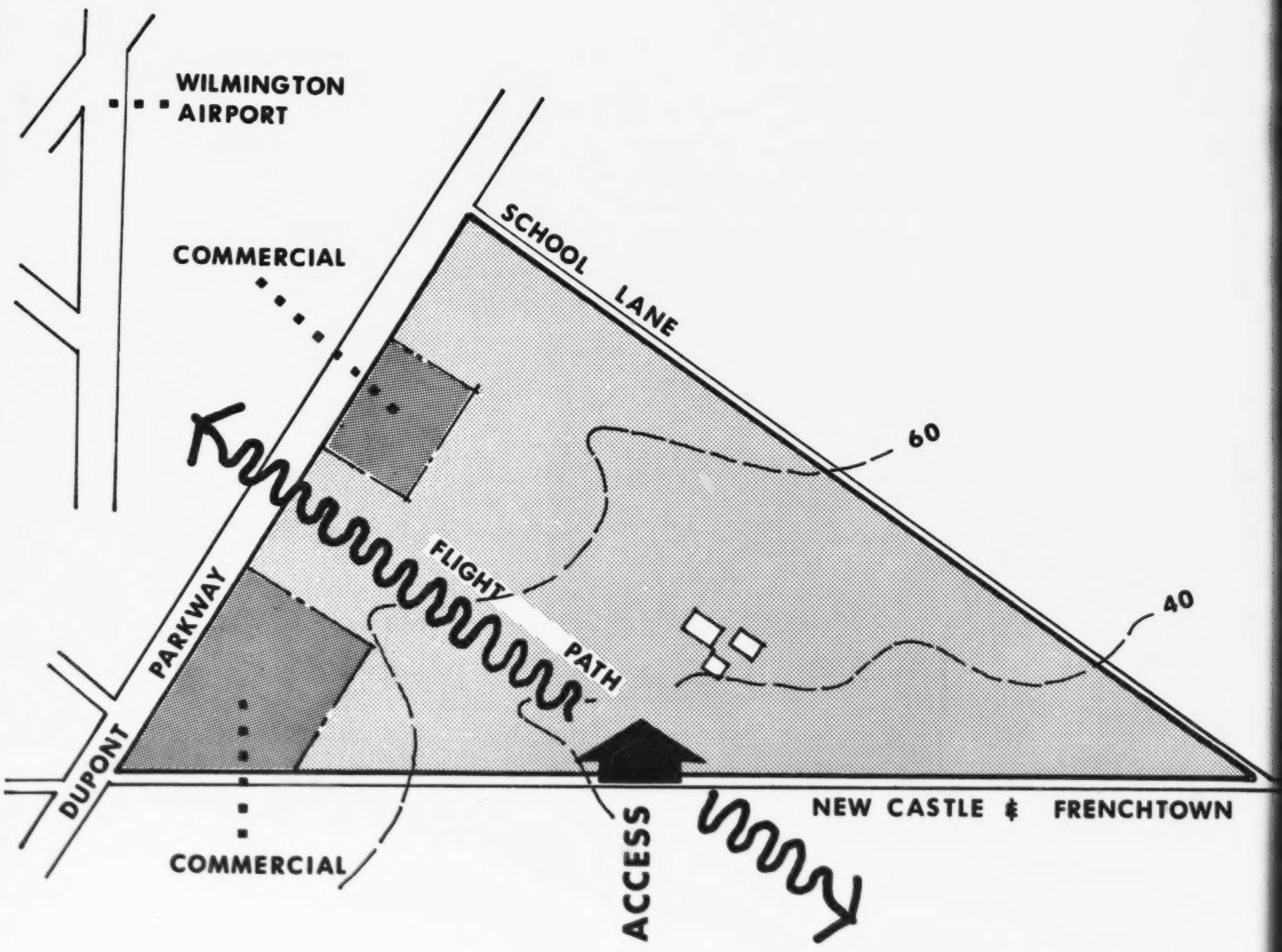
SITE C 2 BREIDABLICK FARM

LOCATION	South of Lancaster Pike at Centerville Road Good relationship to existing urban pattern
ACCESS	Primary access from Lancaster Pike Near public transit route Long-range improvement to Centerville would provide additional access
SIZE	Approximately 124 acres Tree coverage on 25 acres
ENVIRONMENT	Undeveloped area at edge of single-family residential area
SITE CHARACTER	Topography: Gentle roll to south and east Views: Good visibility to adjacent roads
RELATIONSHIP TO COMMUNITY PLANS	Long-range plan calls for medium-density residential – no problem for community college use anticipated
UTILITIES	All available Sanitary sewer problem same as Ferris School – area interceptors up to capacity
AVAILABILITY AND COST	Unknown


ACCESS
CENTER
BUILDING
C3
C3a
LANCASTER
HWY. 741
ACCESS
RAILROAD
TOTAL ACREAGE 145
C3
READING

SITE C 3 DUPONT AIRPORT

LOCATION	East of Highway 141, north of Lancaster Pike Good relationship to existing urban pattern
ACCESS	Good potential from both roadways Near public transit route
SIZE	145 acres with tree cover on approximately 38 acres
ENVIRONMENT	Good, basically at fringe of development
SITE CHARACTER	Topography: Fairly flat – no problems Views: Good visibility from adjacent roads Special Features: Irregular shape – no problem anticipated for development patterns Part of site is low (basically that which is wooded) and is unsuitable for development
RELATIONSHIP TO COMMUNITY PLANS	Long-range land use plan calls for industrial and transportation uses
UTILITIES	All available Sanitary sewer problem – same as other sites in this area (capacity of area interceptors)
AVAILABILITY AND COST	Unknown

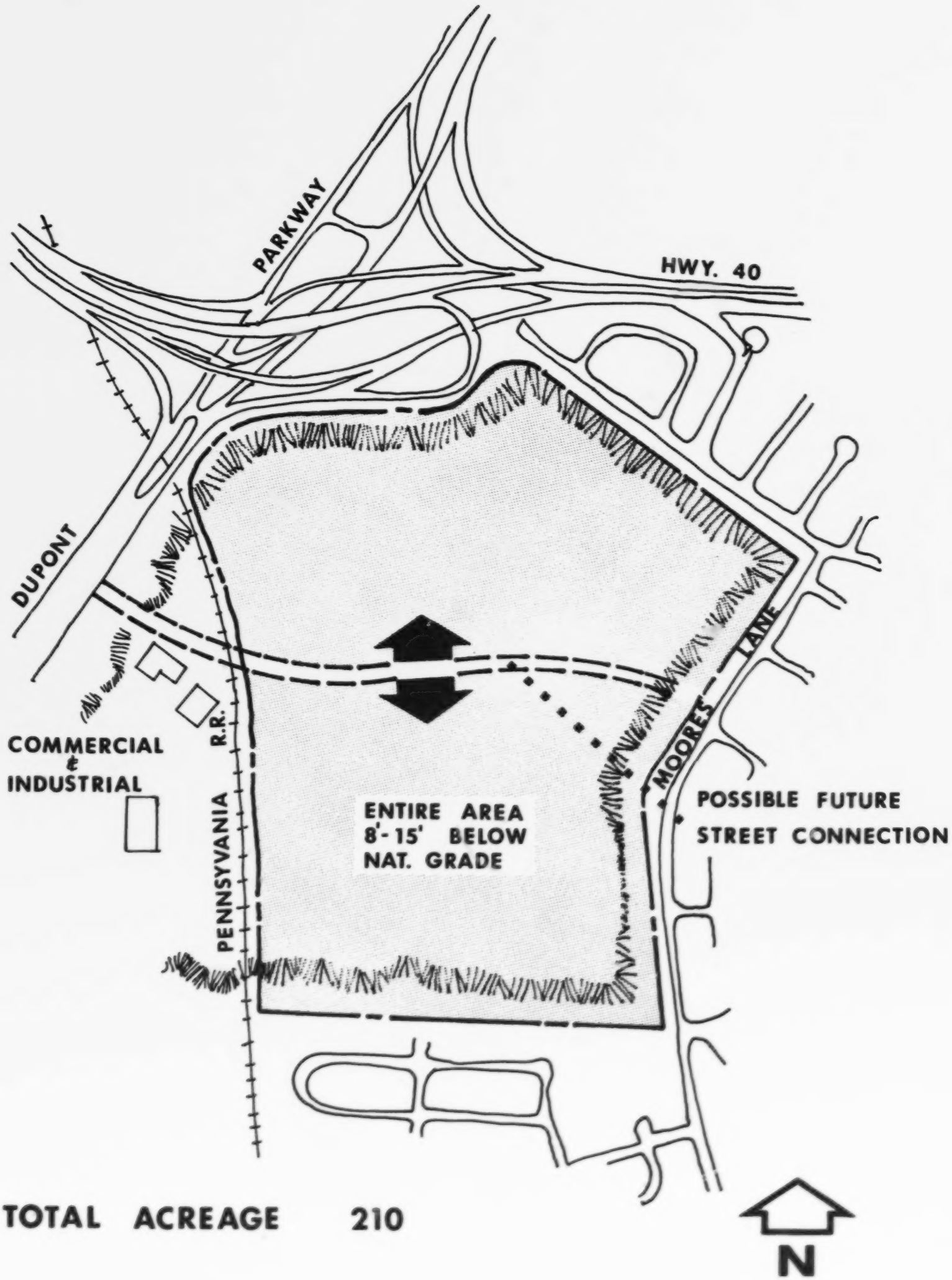


TOTAL ACREAGE	180
COMMERCIAL	12

N

D

SITE D	NEW CASTLE COMMONS
LOCATION	Route 73 at US 13, just southeast of Wilmington Airport South of present urban development
ACCESS	Route 73 primary access Opening to US 13 desirable
SIZE	180 acres less adjacent commercial
ENVIRONMENT	Adjacent to commercial along US 13 Airport proximity somewhat of a problem
SITE CHARACTER	Topography: Gently rolling to flat Views: Poor visibility from adjacent roads
RELATIONSHIP TO COMMUNITY PLANS	Long-range plans call for site to be medium high-density residential
UTILITIES	All available except sanitary sewer – would require extension to interceptor in the area
AVAILABILITY AND COST	Unknown



TOTAL ACREAGE 210

E

SITE E — LANGENFELDER PROPERTY

LOCATION	Southeast of intersection of Route 40 and Route 13 Fairly good relationship to urban pattern
ACCESS	From Dupont Highway (Route 13) Problem – no frontage on highway Accessway would have to be secured Access road through property possible
SIZE	204 acres Possibility of being split by new access road
ENVIRONMENT	Mixed – residential, commercial and industrial
SITE CHARACTER	Problem – low excavated area approximately 8 to 15 feet below grade
RELATIONSHIP TO COMMUNITY PLANS	Long-range plans call for industrial use – no problem for institutional use
UTILITIES	All available – low elevation of site a problem for sanitary sewer and drainage
AVAILABILITY AND COST	Unknown

ESTIMATED COSTS

DELAWARE TECHNICAL AND COMMUNITY COLLEGE
Northern Branch

ESTIMATED COSTS (1968 Unit Costs)

SITE	A1	A2	B1	B2
Land Area in Acres	17.3	17.7	100.0	100.0
Cost per SF	$ .80	$ .50	$ .39	$ –
Cost per Acre	$ 35,000.00	$ 21,780.00	$ 8,000.00	$ –
Special (Utilities, Access, etc.)	$ –	–	–	$ 600,000.00
Total Site	$ 605,500.00	$ 386,400.00	$ 925,000.00	$ 600,000.00
BUILDING AND SITE DEVELOPMENT				
Gross Building Area	390,000 SF	390,000 SF	390,000 SF	390,000 SF
Project Cost per SF	$ 42.00	$ 42.00	$ 38.00	38.00
Total Construction Cost	$ 16,400,000.00	$ 16,400,000.00	$ 14,800,000.00	$ 14,800,000.00
PARKING DEVELOPMENT				
Number of Vehicles	1,554	1,554	2,742	2,742
Project Cost per Vehicle	$ 2,520.00	$ 2,520.00	$ 290.00	$ 290.00
Total Parking Cost	$ 3,920,000.00	$ 3,920,000.00	$ 796,000.00	$ 796,000.00
TOTAL SITE AND DEVELOPMENT	$ 20,925,000.00	$ 20,706,000.00	$ 16,521,000.00	$ 16,196,000.00

APPENDIX

TABLE 1

POPULATION AND HIGH SCHOOL GRADUATES PROJECTIONS
NEW CASTLE COUNTY

	POPULATION	HIGH SCHOOL GRADUATES	GRADUATES–% OF POPULATION
1964	326,296		
1968		5,680	
1969		5,960	
1970	409,900	6,330	1.54
1971		6,640	
1972		6,940	
1973		7,220	
1974		7,620	
1975	488,200	7,870	1.63
1976		8,130	
1977		8,480	
1978		8,780	
1979		9,060	
1980	584,300	9,270	1.59
1981			
1982			
1983			
1984			
1985	672,600	10,750	1.60

SOURCE: Arthur D. Little, Inc. report to Greater Wilmington Development Council, 1968-1980 projection – Caudill Rowlett Scott, 1981-1985 projection

TABLE 2
ENROLLMENT PROJECTIONS

	1970-71	1975-76	1979-80	1985-86 Low	1985-86 High
Public and Private Grade 12 Graduates	6,335	7,871	9,056	10,750	10,750
Percent of graduates likely to enroll at Northern Branch	21	35	40	40	43
Freshman year demand	1,330	2,755	3,622	4,300	4,620
Sophomore students as percent of Freshmen	44	54	66	66	67
Sophomore year demand	585	1,488	2,391	2,840	3,100
Unclassified group as percent of Freshmen and Sophomores	7	10	12	12	12
TOTAL FULL–TIME STUDENTS	2,049	4,667	6,735	8,430	9,010
Full-time equivalent of full-time students (80%)	1,639	3,734	5,388	6,744	7,208
TOTAL PART–TIME STUDENTS (1.5 to 2.0 x full-time equivalent percentage of full-time students)	2,622	6,721	10,776	13,488	14,416
Part-time students in the day program (30%)	787	2,016	3,233	4,046	4,330
Full-time equivalent of part-time day students (50%)	394	1,008	1,617	2,023	2,165
TOTAL FULL–TIME EQUIVALENT STUDENTS IN THE DAY PROGRAM	2,033	4,742	7,005	8,767	9,373
Total day enrollment (headcount)	2,836	6,683	9,968	12,476	13,340
Part-time students in the evening program (70%)	1,835	4,705	7,543	9,442	10,086
Full-time equivalent of part-time evening students (28%)	514	1,317	2,112	2,640	2,820
TOTAL FULL–TIME EQUIVALENT STUDENTS (Day and Evening)	2,988	7,188	10,928	11,407	12,193
TOTAL STUDENT ENROLLMENT (headcount)	4,761	11,388	17,511	21,918	23,426

SOURCE: Arthur D. Little Inc., 1970-1979 projection – Caudill Rowlett Scott, 1985 projection based on ADL methodology. Public and private grade 12 graduates for 1985, determined using same percentage of projected population in 1985 as in 1979 (1.60% of 672,600).

TABLE 3

LAND AREA REQUIREMENTS (Urban Site) – 3,000 FTE DAY ENROLLMENT

	ACRES
Building Area – (390,000 gross square feet at floor area ratio of 1.5)	6.00
Parking – (1,554 vehicles at 100 SF each)	3.56
Subtotal	9.56
Expansion – (at 67%)	6.36
TOTAL	15.92

TABLE 4

LAND AREA REQUIREMENTS (Suburban Site) – 3,000 FTE DAY ENROLLMENT

	ACRES
Building Area – (390,000 gross square feet at floor area ratio of .4)	22.4
Parking – (2,742 vehicles at 400 SF each)	25.2
Streets and Drives – (at 30% of parking)	7.6
Open Space and Recreation	20.0
Subtotal	75.2
Expansion – (at 67%)	50.0
TOTAL	125.2

TABLE 5
PARKING STUDY – 3,000 FTE DAY ENROLLMENT

ENROLLMENT TOTALS

3,000 FTE Day	
4,470 FTE Total	(1.49A)
4,200 Headcount Day	(1.40A)
7,050 Headcount Total	(2.35A)

BASIS FOR CAR SPACES	CENTRAL	SUBURBAN
Students	1 per 3 (day headcount)	1 per 1.7 (day headcount)
Faculty and Staff	10% of Students	10% of Students
Visitors	1% of Students	1% of Students

TOTAL SPACES

Students	1,400	2,470
Faculty and Staff	140	247
Visitors	14	25
TOTAL	1,554	2,742
TOTAL PER FTE TOTAL	1 per 2.88	1 per 1.63

MINIMUM LAND REQUIRED (Acres)

Using Structures @ 100 SF/car	3.56	6.30
Using Surface @ 400 SF/car	14.25	25.20

DEVELOPMENT COSTS*

Structures @ $2,520/car	$ 3,920,000	$ 6,920,000
Surface @ $290/car	451,000	796,000

*not including land